I-680 Southbound Express Lane Pilot Project

**Alameda County
Congestion Management Agency**

In partnership with
- Alameda County Transportation Improvement Authority
- Santa Clara Valley Transportation Authority

In cooperation with
- Caltrans
- California Highway Patrol

I-680 Southbound Express Lane Project – Vendor Outreach Agenda

1. Opening Comments and Introductions
2. Discussion of ETS RFP Contract Issues
3. Overview of Project and Contractor Responsibilities
4. Overview of the Express Lane ETS and Schedule
5. Closing Comments and Q&A Session

I-680 Southbound Express Lane Project Contract Issues

- Bond Requirements
- Insurance Requirements
- Pre-Award Audit
- DBE Requirements
- Small Business Enterprise (SBE) and Local Business Enterprise (LBE) Requirements
- Non-Discrimination Clause
- Levine Act

I-680 Corridor - Express Lane Limits
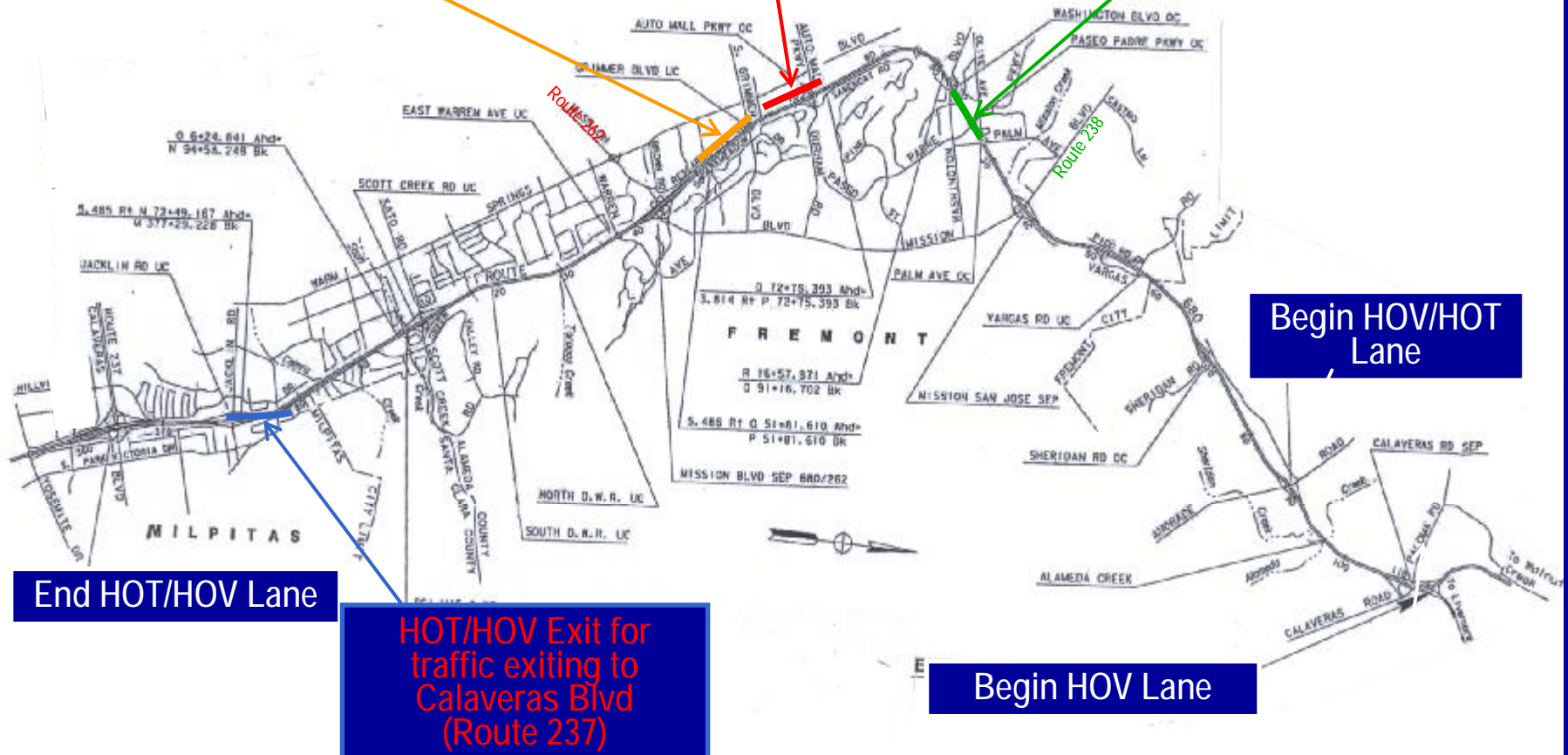
I-680 Southbound Express Lane

- Bay Area's first HOT lane project
- Converts Existing HOV Lane to a Combined HOV/HOT Lane
- 14-mile stretch of southbound I-680 over the Sunol Grade
- Starts at Highway 84 in the north and Ends at Highway 237 in the south

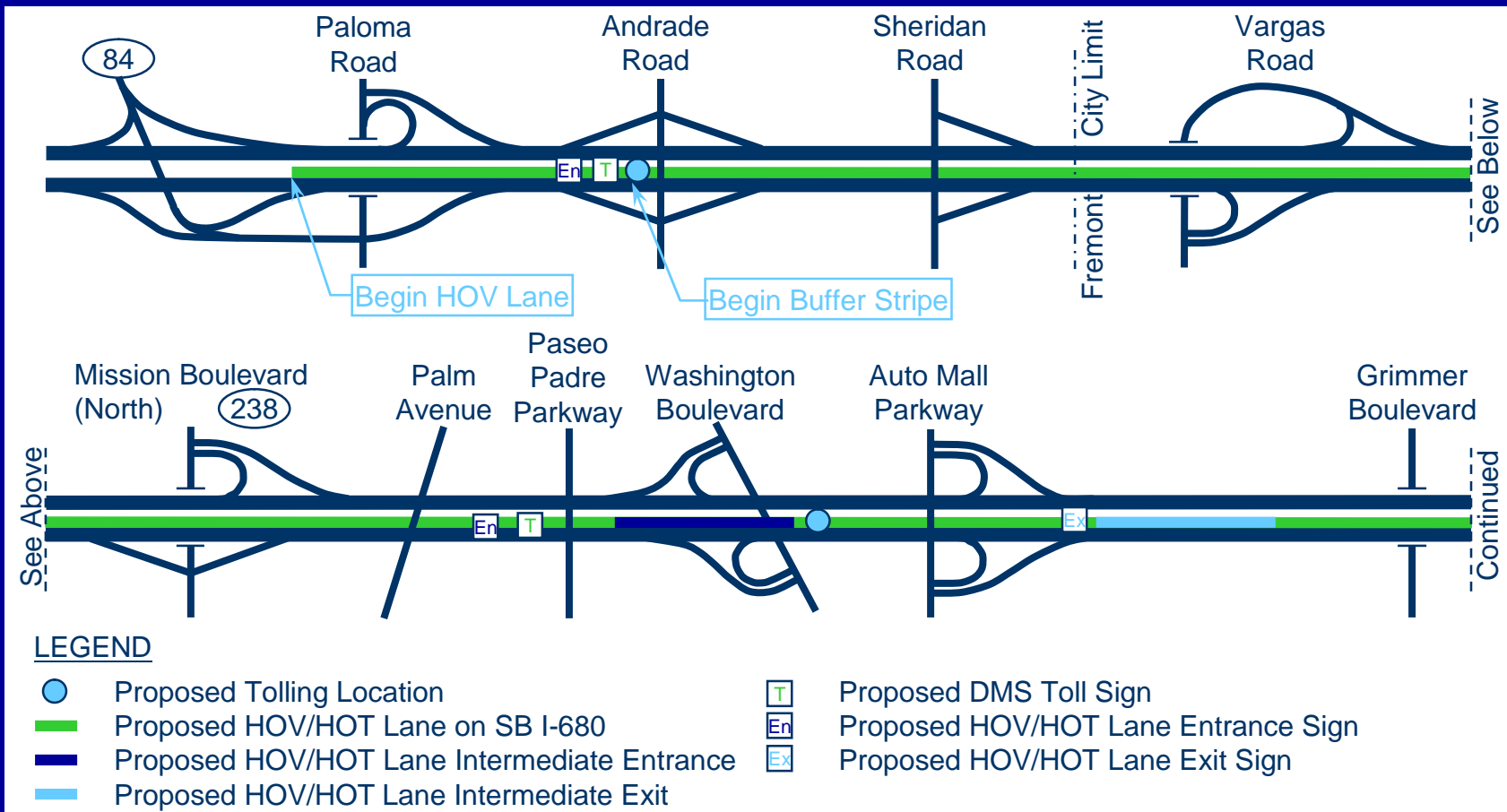# I-680 Southbound Express Lane Project – Locations for Intermediate Access

HOT/HOV Entrance for traffic entering from Auto Mall Pkwy

HOT/HOV Exit for traffic exiting to Mission Blvd (South) (Route 262)

HOT/HOV Entrance for traffic entering from Mission Blvd (North) (Route 238)

Begin HOV/HOT Lane

End HOT/HOV Lane

HOT/HOV Exit for traffic exiting to Calaveras Blvd (Route 237)

Begin HOV Lane

I-680 Southbound Express Lane Schematic - Route 84 to Grimmer Boulevard

LEGEND

- ● Proposed Tolling Location
- ▬ Proposed HOV/HOT Lane on SB I-680
- ▬ Proposed HOV/HOT Lane Intermediate Entrance
- ▬ Proposed HOV/HOT Lane Intermediate Exit
- [T] Proposed DMS Toll Sign
- [En] Proposed HOV/HOT Lane Entrance Sign
- [Ex] Proposed HOV/HOT Lane Exit Sign

I-680 Southbound Express Lane Schematic - Grimmer Boulevard to Route 237

Grimmer Boulevard — Mission Boulevard (South) 262 — Warren Avenue — Scott Creek Road — City Limit / City Limit — Fremont / Milpitas — See Below

Continued — En T

Jacklin Road — Calaveras Boulevard 237 — Yosemite Drive

See Above — Ex

End HOV/Express Lane

LEGEND

- ⬤ Proposed Tolling Location
- ▬ Proposed HOV/HOT Lane on SB I-680
- ▬ Proposed HOV/HOT Lane Intermediate Entrance
- ▬ Proposed HOV/HOT Lane Intermediate Exit
- T Proposed DMS Toll Sign
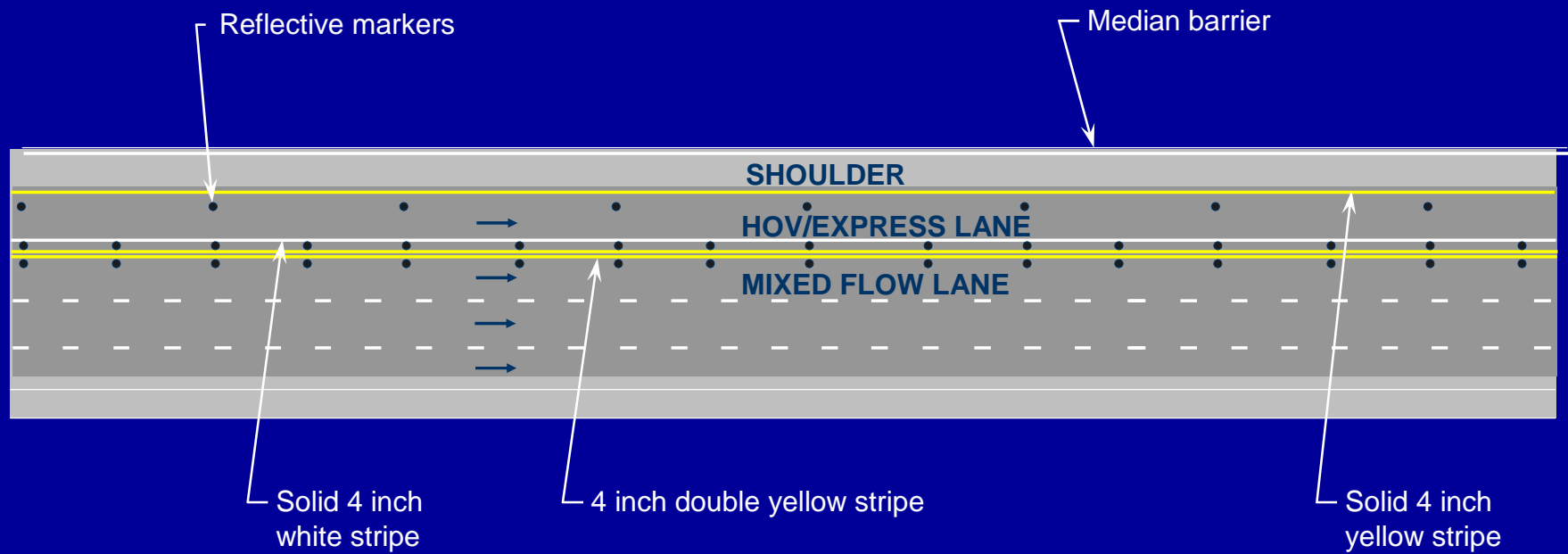- En Proposed HOV/HOT Lane Entrance Sign
- Ex Proposed HOV/HOT Lane Exit Sign

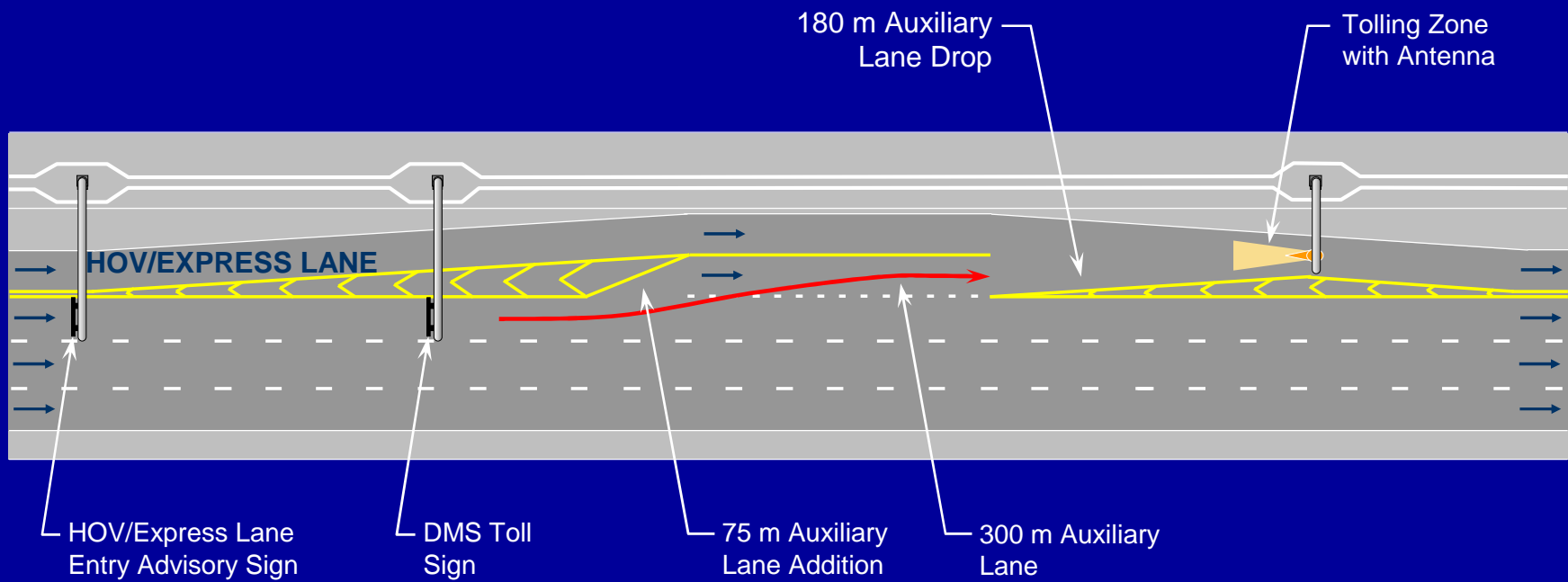# I-680 Southbound Express Lane Unique Civil Features

- Access Zones Include Acceleration and Deceleration Lanes
- 2-Foot Buffer Stripe Separation
- Inside Shoulder Enforcement Areas

I-680 Southbound Express Lane
Two Foot Buffer Stripe

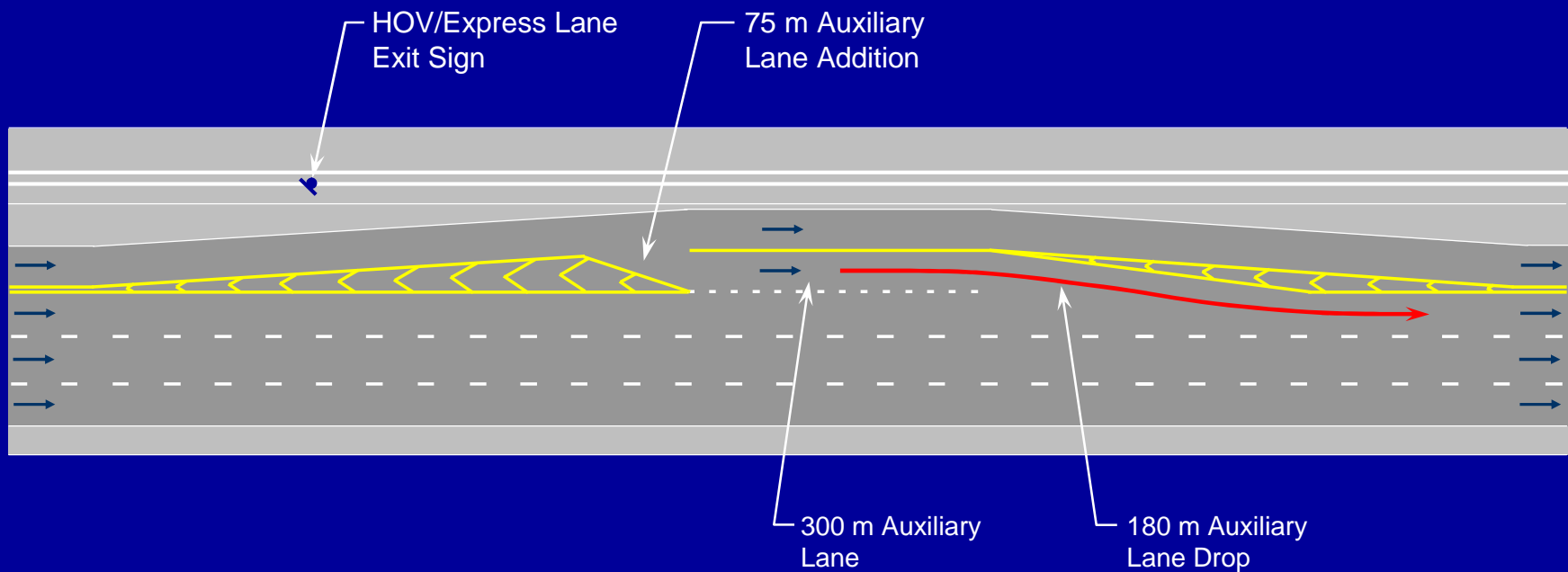# I-680 Southbound Express Lane Intermediate Entrance / Tolling Zone

180 m Auxiliary Lane Drop

Tolling Zone with Antenna

HOV/EXPRESS LANE

HOV/Express Lane Entry Advisory Sign

DMS Toll Sign

75 m Auxiliary Lane Addition

300 m Auxiliary Lane

I-680 Southbound Express Lane Intermediate Exit

HOV/Express Lane Exit Sign

75 m Auxiliary Lane Addition

300 m Auxiliary Lane

180 m Auxiliary Lane Drop

I-680 Express Lane Median Overhead Sign

I-680 Express Lane Median Overhead Sign
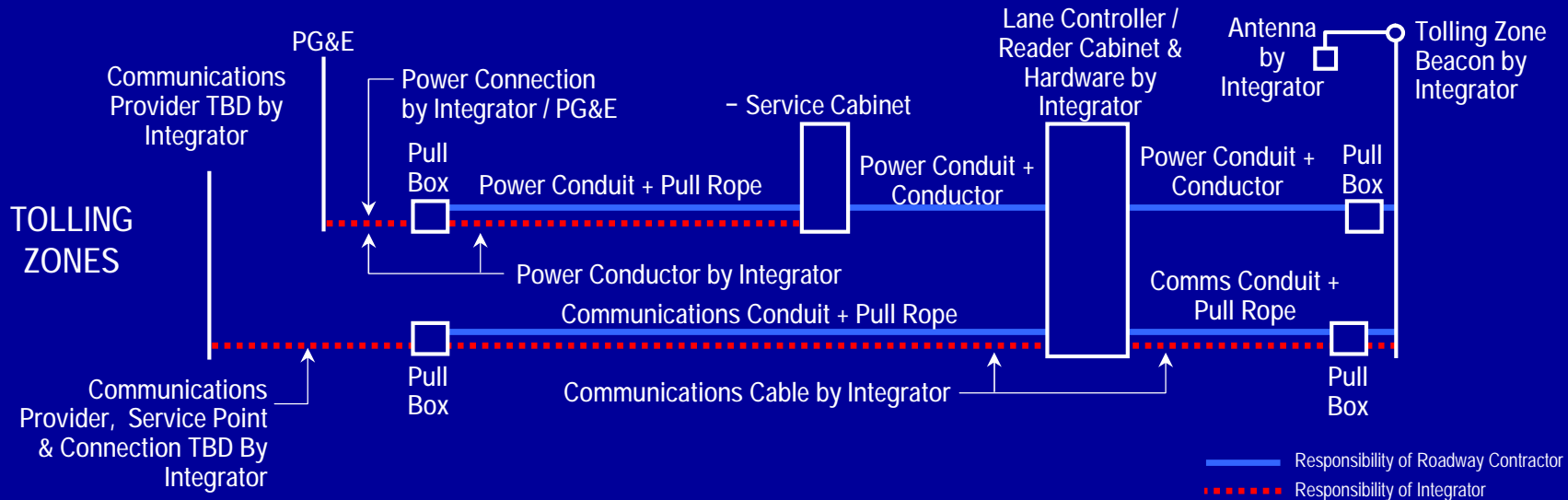
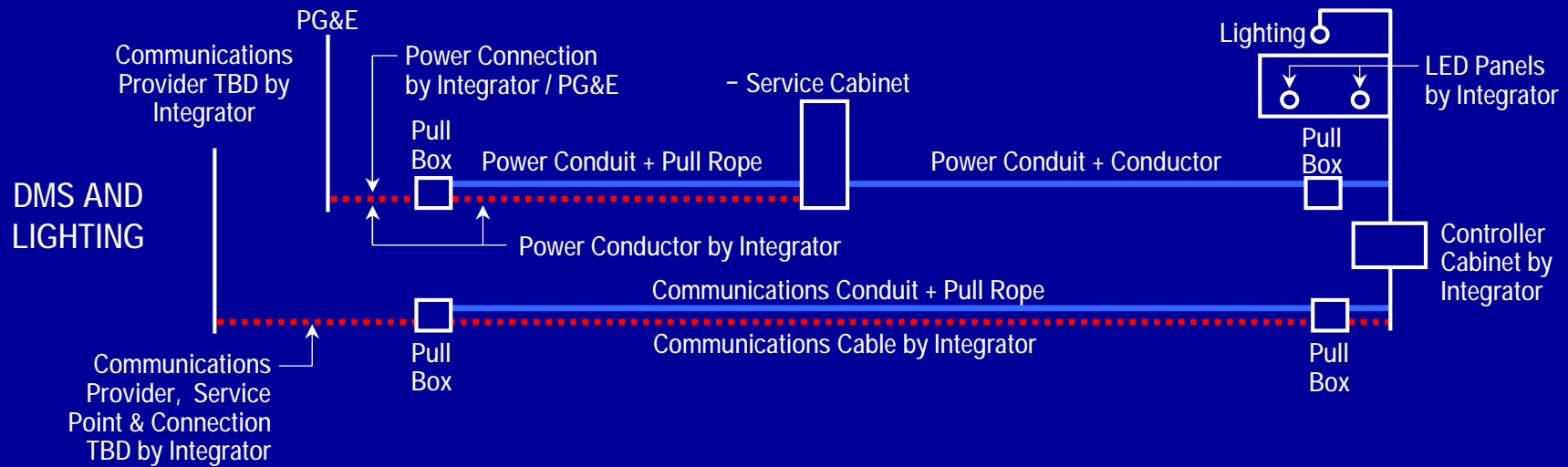# I-680 Express Lane Median Overhead Sign

I-680 Southbound Express Lane Roadway Construction

- Three Roadway Construction Packages
- Roadway Design in Metric Units
- Road Construction will install most of the Express Lane Infrastructure
- Requires Close Coordination between Systems Integrator and Roadway Contractors
- Roadway Construction Window for Integrator
- Requires Caltrans Review and Approval of Plans

I-680 Southbound Express Lane Contractor Responsibility Chart

DMS AND LIGHTING

PG&E

Communications Provider TBD by Integrator

Power Connection by Integrator / PG&E

Pull Box

Power Conduit + Pull Rope

Service Cabinet

Power Conduit + Conductor

Lighting

LED Panels by Integrator

Pull Box

Controller Cabinet by Integrator

Power Conductor by Integrator

Communications Conduit + Pull Rope

Communications Provider, Service Point & Connection TBD by Integrator

Pull Box

Communications Cable by Integrator

Pull Box

TOLLING ZONES

PG&E

Communications Provider TBD by Integrator

Power Connection by Integrator / PG&E

Pull Box

Power Conduit + Pull Rope

Service Cabinet

Power Conduit + Conductor

Lane Controller / Reader Cabinet & Hardware by Integrator

Power Conduit + Conductor

Antenna by Integrator

Tolling Zone Beacon by Integrator

Pull Box

Power Conductor by Integrator

Communications Conduit + Pull Rope

Comms Conduit + Pull Rope

Communications Provider, Service Point & Connection TBD By Integrator

Pull Box

Communications Cable by Integrator

Pull Box

Responsibility of Roadway Contractor
Responsibility of Integrator

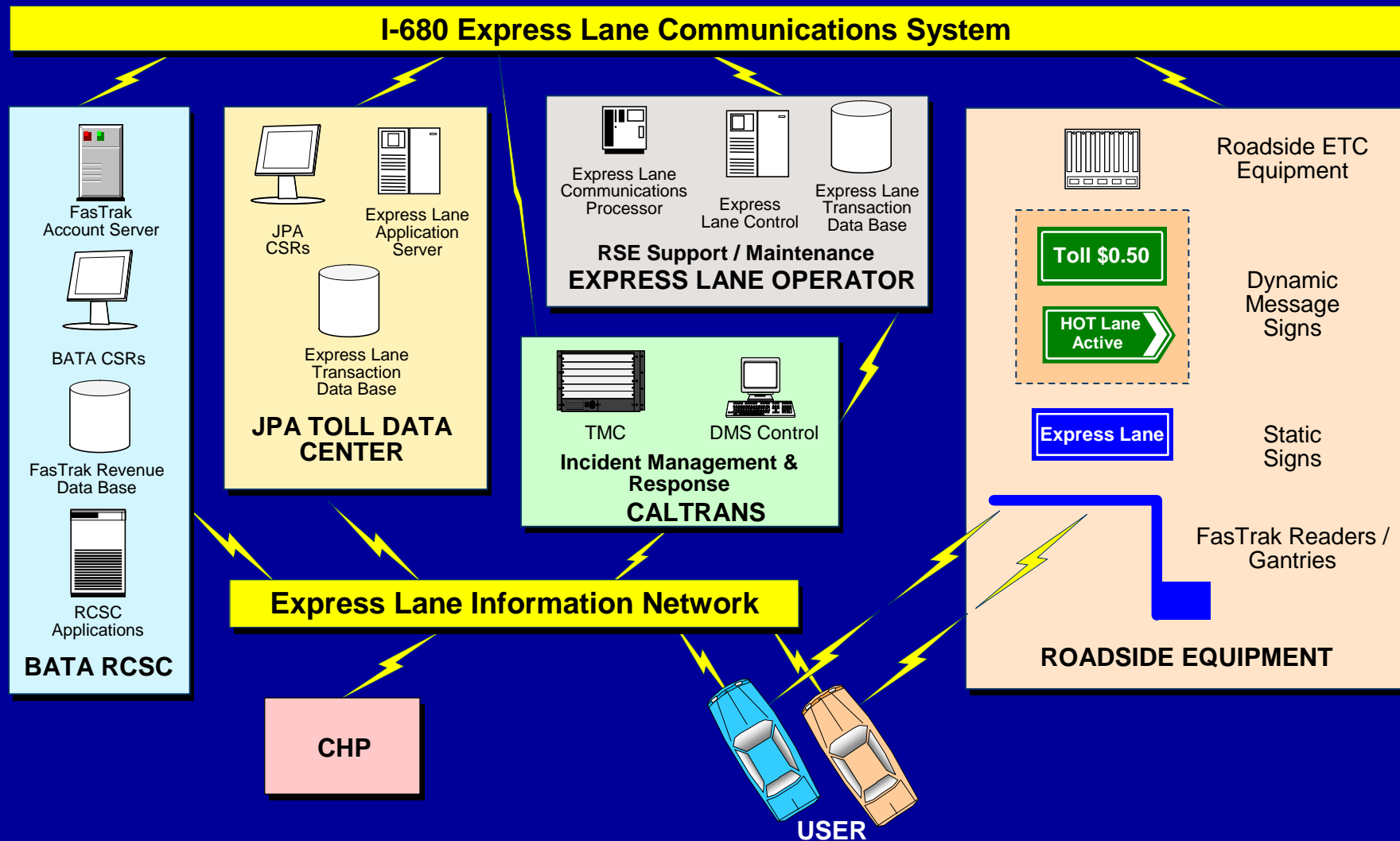# I-680 Southbound Express Lane Project

Any Civil Related Questions?

I-680 Southbound Express Lane Electronic Toll System

- All Electronic Toll Collection System (ETS)
- Full interoperability with FasTrak ETC System (Title-21)
- Integration with BATA Regional Customer Service and Account Management Systems
- Visual system enforcement by the CHP assisted by electronic equipment

Electronic Toll System Architecture

I-680 Express Lane Communications System

BATA RCSC
- FasTrak Account Server
- BATA CSRs
- FasTrak Revenue Data Base
- RCSC Applications

JPA TOLL DATA CENTER
- JPA CSRs
- Express Lane Application Server
- Express Lane Transaction Data Base

EXPRESS LANE OPERATOR
RSE Support / Maintenance
- Express Lane Communications Processor
- Express Lane Control
- Express Lane Transaction Data Base

CALTRANS
Incident Management & Response
- TMC
- DMS Control

ROADSIDE EQUIPMENT
- Roadside ETC Equipment
- Toll $0.50
- HOT Lane Active
- Dynamic Message Signs
- Express Lane
- Static Signs
- FasTrak Readers / Gantries

Express Lane Information Network

CHP

USER

I-680 Southbound Express Lane Unique Tolling System Features

- Full Traffic Monitoring in Express and Mixed Use Lanes

- A Primary Goal of Express Lane Operation is Revenue Maximization

- Enforcement Using Hand-Held Portable Devices

I-680 Southbound Express Lane JPA Responsibilities

- ETS Roadside Equipment
- Vehicle Detection Station Equipment
- Dynamic Message Signs
- Toll Data Center
  - Dynamic Pricing Subsystem (Trip Generation)
  - Interface to BATA RCSC
  - Interface to Regional TMC (via Caltrans)
  - Express Lane Customer Service Representatives
- ETS Operations and Maintenance
- System Enforcement (via CHP)

I-680 Southbound Express Lane BATA Responsibilities

- FasTrak account management
- Customer service interface to the public
- Express Lane trip record processing
- Revenue management functions
- Transponder inventory and tracking
- Transponder fulfillment
- Provide FasTrak revenue and account information to the JPA

I-680 Express Lane System Enforcement Strategy

- Enforcement Agency:
  - California Highway Patrol
- Visual Enforcement from CHP
- System Enforcement Technologies:
  - FasTrak Transponder Detection Beacons
  - Mobile Enforcement Readers
  - Hand Held Enforcement Devices

I-680 Southbound Express Lane Schedule

- Summer 2008: Release ETS RFP
- Fall 2008: Civil Construction Commences
- Spring 2009: Systems Integrator NTP
- Spring 2010: System Factory Testing
- Summer 2010: Equipment Installation Complete
- Late 2010: Open to Traffic
- 2011: System and Project Evaluation

I-680 Southbound Express Lane Project

Any Electronic Toll System

Related Questions?

I-680 Southbound Express Lane Project

1. The installation of the ETS equipment will be done during a specific construction window specified within each of the three roadway contractor packages. Would there be any specific language in the roadway contract specifications you would suggest to facilitate the work?

2. Due to the duration of the roadway construction and depending on the date of the NTP to the Integrator, there may be float in the Systems Integrator schedule. What would your approach be and what would you suggest be done?

3. The roadway contractor will provide and install a large portion of the ETS infrastructure. The design of the conduit runs and size were estimated. The objective is to reduce (not eliminate) the amount of construction required by the Systems Integrator. What recommendations would you suggest?

4. What time period are you comfortable with regarding the toll system design, development and factory testing? Furthermore, what time period would you need to effectively develop the dynamic pricing software?

5. Please let us know what experience your company has using RTMS equipment for traffic detection? Is this technology improving over time?

6. What requirements do you think we should incorporate into the ETS RFP that will ensure that you have the type of staff resources you will need to develop the dynamic pricing algorithms?

7. Has your company had a lot of experience testing software by using simulated data, which will be required during the testing of the dynamic pricing software?

8. Do you have any concerns about operational aspects of the toll change interval or the minimum toll change increment?

9. At what time intervals would you design into the system increasing or decreasing toll rates depending upon the traffic density/speed in the Express and MF lanes?